BEFORE
THE PUBLIC SERVICE COMMISSION
OF SOUTH CAROLINA

DOCKET NO. 2020-63-E

IN RE:	Bridgestone Americas Tire Operations, LLC, Petitioner, v. Dominion Energy South Carolina, Inc. Respondent.	**REBUTTAL TESTIMONY OF EDWARD G. McGAVRAN III, PE**

Q. PLEASE STATE YOUR NAME, POSITION, AND BUSINESS ADDRESS FOR THE RECORD.

A. My name is Edward G. (Ted) McGavran III, P.E., 220 Cape August Place, Belmont, North Carolina 28012.

Q. ON WHOSE BEHALF ARE YOU PRESENTING TESTIMONY IN THIS PROCEEDING?

A. I am testifying on behalf of Bridgestone Americas Tire Operations, LLC ("BATO").

Q. MR. McGAVRAN, DID YOU SUBMIT DIRECT TESTIMONY IN THIS DOCKET?

A. Yes.

Q. DESC WITNESS RAFTERY SUGGESTS THAT INDUSTRIAL CUSTOMER SOLAR GENERATION IN GENERAL AND BATO'S IN PARTICULAR ARE SUBJECT TO THE SCGIP. HOW WOULD YOU RESPOND?

A. Taken to its logical conclusion, Mr. Raftery would have the Commission rule that all customer owned solar generation would be subject to the interconnection process on the basis that all customer owned generation operates in parallel. Mr. Raftery is mistaken. For parallel operation of the solar resource to occur, BATO and DESC would have to be connected directly to the same bus and share a common point of interconnection. This is not the case here as the solar resource connects within the plant power system and never connects to the DESC system in any way. Therefore, BATO's solar array is clearly not parallel with the utility.

If Mr. Raftery's testimony were correct, every standby generator at every hospital, water plant, sewer plant, bank, and data center would be subject the SCGIP interconnection process. If it was intended that any customer generation placed in service was to be defined as operating in parallel, why was that not explicitly provided for in the legislation? Mr. Raftery's assertion that all customer owned generation is considered to operate in parallel with DESC is impractical and unheard of in the industry.

Q. DO YOU AND MR. RAFTERY AGREE ON ANY ISSUE IN DISPUTE?

A. Yes. On page 12, line 16 Mr. Raftery admits that the "entire purpose" of BATO's solar array is to serve BATO's load only in the BATO plant which means it was never intended as an export resource to DESC nor connected in a manner to facilitate export. Therefore, BATO's solar array is not subject to the interconnection process or SCGIP which are created entirely for resources designed and built to facilitate power export to the host utility.

Q. DESC WITNESS XANTHAKOS TESTIFIED THAT THE BATO SOLAR ARRAY MUST BE EVALUATED TO ENSURE THE RELIABILITY OF THE BULK ELECTRIC SYSTEM OR BES. DO YOU AGREE?

A. No. Mr. Xanthakos failed to tie BATO's solar array to the Bulk Electrical System ("BES") and DESC's bus or point of connection with DESC.

First, BATO is not connected to DESC's bulk electrical or transmission system. BATO is connected to a transmission tap at 115 kV. Bulk transmission is considered to be 100 kV and above, but FERC excludes certain transmission configurations:

> The exclusions focus on configurations serving radial and retail uses. Among those system elements that will be excluded from the BES are: certain radial transmission systems that operate at 100 kV or above and primarily serve retail load; small to mid-sized behind-the meter generation resources, "local networks" that are not intended to facilitate power transmission beyond the local load area being served, and reactive power devices owned and operated by retail customers for their own use. Van Ness Feldman, LLP, The Power of Collaboration, attached as Exhibit A.

FERC BES requirements exclude BATO's 115 kV radial line service from DESC as an element of the BES. The 115 kV radial line serving BATO is not a loop, but feeds directly into the BATO plant where the radial line terminates. Consequently, the 115 kV radial line serving BATO has no impact on the bulk electrical system. As such any attempt to say BATO's generation here will affect the DESC bulk electrical service is without merit.

Second, the BATO plant's point of connection with DESC is in DESC's substation. Both DESC and BATO have breakers on their respective side of the substation for protection from faults. BATO's solar array is downstream of the BATO plant's breakers and is not connected to the DESC substation. Mr. Xanthakos fails to demonstrate that the solar array is interconnected to DESC which is clearly not the case. The electrical connection for the solar array is behind the meter. Mr. Xanthakos fails to identify a point of interconnection for the solar array to DESC because there is not one. Mr. Xanthakos' testimony that BATO's solar array connects to the same node or point of connection with DESC is simply incorrect.

Q. MR. XANTHAKOS RAISES A QUESTION ABOUT THE IMPACT OR "INFLUENCE" OF THE BATO SOLAR ARRAY ON DESC'S SYSTEM. HOW DO YOU RESPOND?

A. This is strictly an academic argument unfounded by any real world evidence in this case. On page 6 line 18-19 of his direct testimony, Mr. Xanthakos discusses the concept of parallel operation "influencing" the utility system, but as we have proven, there is no influence here as power is never exported and can never be exported. As I testified in my direct testimony, and corroborated by the testimony of Mr. Freeman, BATO's absolute minimum load exceeds the entire output of BATO's solar array. Thus, when the BATO plant is completely at rest, the solar array is not capable of meeting this minimum load.

Moreover, even without the solar generation, the operation of BATO's equipment can lead to a system fault. As I testified on direct, BATO's plant is a very heavy industrial load which includes large motor loads such as major air compressors and chillers that exceed 1000 kVA. These large components are necessary for the production process. The nature of these large motors is such as to create a significant fault current contribution leading to backflow generated by BATO's equipment. The fault contributions from those motors onto the utility system would be significantly greater than the solar array. Prior to the construction of the solar array with its reverse flow monitor mandated by DESC, BATO and DESC installed protective mechanisms to protect against damage to DESC's system from a momentary fault. BATO has now installed the reverse flow monitors.

Q. ARE YOU AWARE THAT DESC WITNESS FURTICK TESTIFIES THAT EVEN WITH THE PROTECTIONS DESC HAS INSISTED BATO INSTALL ON ITS SOLAR ARRAY TO PREVENT A REVERSE POWER FLOW EVENT, THERE REMAINS A RISK OF A REVERSE POWER EVENT?

A. Yes. Mr. Furtick's testimony, however, demonstrates a lack of understanding of the behavior of reverse power flow inherent to the design and operation of a large manufacturing facility. BATO's equipment, like that of many large manufacturing plants, is capable of pushing electric power back onto DESC's distribution lines in the event of a fault or sudden loss of electricity from DESC. BATO and DESC have installed protection against damage in these circumstances on both sides of the meter. For example, there was a power outage at the Aiken Passenger and Light Truck Tire (PSR) plant on Thursday, June 4, 2020 around 5:30PM. DESC acknowledged that the root cause of the outage was that mylar balloons got into the transmission lines and caused a fault. BATO lost all voltage at both Aiken County plants for almost 12 cycles. As a result, the Aiken Passenger and Light Truck Tire plant reverse flow protection relays tripped the main breakers preventing electric power to flow back onto DESC's system. The Aiken Off Road Tire plant (operating without reverse flow protection required at the Aiken Passenger and Light Truck Tire plant for operation of the solar array) experienced the loss of voltage but did not experience tripped breakers as a result of the supply disruption. Because of the large motors that operate throughout the plant, in the rare event of a DESC fault, the equipment operating in the plant would push energy back onto the grid if reverse flow protections were not in place. The June 4th outage proved the

operation of the reverse flow protection as they tripped once the instantaneous failure occurred at the Plant.

The fault contributions from those motors onto the utility system would be significantly greater than the solar array. In the original design approved by DESC when the Aiken County plants were put in operation, electric power was permitted to flow between the plant and DESC. Thus Mr. Furtick's testimony that the potential of a reverse power event created by the solar array requires additional study establishes a double standard because DESC accepts the risk of the reverse flow of residual plant power while objecting to the risk of a much smaller load from a sustainable solar array.

Here we have real-world proof that the reverse flow protection installed is effective to prevent electric power from flowing back onto DESC's distribution lines.

The reverse flow protection as they tripped once the instantaneous failure occurred at the Aiken Passenger and Light Truck Tire plant and neither the Aiken Plant nor DESC experienced any damage. The reverse flow monitors worked as designed. The Commission could have no better evidence from which to conclude that the exposure to DESC's transmission system is totally unaffected by anything at the BATO plant, much less an additional 2 MW generation resource connected within the plant. The solar array is incapable of damaging DESC's system even when the plant is at its minimum electrical load.

Q. DO YOU TAKE FURTHER ISSUE WITH MR. FURTICK'S TESTIMONY?

A. Mr. Furtick's testimony is cumulative to Mr. Raftery's testimony and Mr. Xanthakos' testimony. The testimony of each of DESC's witnesses refers to the testimony of the next witness as if each were a resource for the other. Mr. Furtick's testimony does not salvage DESC's case. He points to no evidence of "influence" by BATO's plant, dealing instead in speculation or hypotheticals. Nor does Mr. Furtick provide evidence of a point of interconnection.

Q. HOW IS MR. FURTICK'S TESMONY HELPFUL TO BATO?

A. Mr. Furtick describes the BATO solar generation on page 6 lines 1-6, of his direct testimony. Mr. Furtick describes the BATO's system's operating mode as follows:

> "In contrast, a stand-alone system, which may be referred to as a "non-parallel" system, would be considered a system that is completely separate from the DESC system, with no possibility whatsoever of (i) flowing power back to the DESC system, (ii) flowing power in conjunction with the DESC system, or (iii) disturbing operation of the DESC system in any way."

This is a perfect description of BATO's system operating mode.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes.

Exhibit A

Van Ness Feldman LLP

The Power of Collaboration

Alerts

FERC Approves New Definition of Bulk Electric System, Reserves Determination of Which Facilities Are "Used in Local Distribution"

January 2, 2013

In a new Final Rule issued December 20, 2012, the Federal Energy Regulatory Commission (FERC) approved changes to the definition of the "bulk electric system" (BES) that will be used by the North American Electric Reliability Corporation (NERC) for electric reliability purposes. With few modifications, the Final Rule adopts changes that had been proposed by NERC in response to FERC Order No. 743, issued November 18, 2010. [*See* our November 22, 2010 VNF Alert on Order No. 743.]

The new BES definition is important because it establishes the process by which NERC and FERC will determine which elements of the electric system will be subject to and which elements will be exempted from mandatory electric reliability standards. The final rule approved changes to the NERC procedures and implementation plan for granting exemptions from the BES definition.

The most significant change the final rule made to NERC's proposed definition of the BES was to reserve for FERC a case-by-case determination of which facilities are "used in local distribution," and thereby excluded from FERC jurisdiction under Section 215 of the Federal Power Act (FPA). The final rule takes effect 60 days after publication in the *Federal Register*.

NEW DEFINITION OF BES

The new definition of "bulk electric system" includes any transmission element operated at 100 kV or above, and any real power and reactive power resources connected to the grid at 100 kV or higher, subject to an inclusion and exclusion process. However, the final rule also makes clear that electric facilities and system elements that operate below 100 kV will also be included if they are "necessary for the operation of the interconnected transmission network." The new BES definition and the

inclusion and exclusion process removes most of the discretion that regional reliability entities have in designating which electric system facilities are required to comply with electric reliability standards.

SPECIFIC FACILITY CONFIGURATIONS INCLUDED IN THE FINAL RULE

The final rule identifies certain facility configurations as included within the BES that otherwise might not be self-evident. These include: transformers with primary terminals and at least one secondary terminal operated at or above 100 kV, generation facilities (including dispersed power facilities like wind and solar plants) with gross nameplate capacity above 75 MVA connected at 100 kV or above, and any blackstart resources identified in the transmission operator's restoration plan (regardless of capacity or connection voltage). The final rule clarified that generator tie-lines of 100 kV and above from generators with gross nameplate capacity above 75 MVA would also fall within the definition of the BES, and would not be excluded under the "radial system" or "local network" exclusions (see below).

The exclusions focus on configurations serving radial and retail uses. Among those system elements that will be excluded from the BES are: certain radial transmission systems that operate at 100 kV or above and primarily serve retail load; small to mid-sized behind-the meter generation resources, "local networks" that are not intended to facilitate power transmission beyond the local load area being served, and reactive power devices owned and operated by retail customers for their own use.

The final rule rejected NERC's proposed exclusion from the BES for generation facilities connected to radial systems, and FERC instead found that the radial system exclusion applies only to "transmission elements," not generation elements in radial systems. Significantly for wind farms and similar generation configurations, FERC disagreed with NERC that collector systems below 100 kV that deliver aggregated generation to the BES should be considered local distribution facilities, but did not require categorical inclusion of such collector systems in the BES definition. In addition, the final rule clarified that transmission elements that qualify for the "radial system" exclusion may have only one point of interconnection to the grid; systems with more than one point of interconnection would not qualify as "radial."

PROCEDURES FOR INCLUDING OR EXCLUDING SPECIFIC ELEMENTS FROM THE BES

The final rule approved a new process through which NERC-registered entities may request that certain facilities or elements be included in or excluded from the BES. Under the new process, registered entities would identify "all facilities, including sub-100 kV elements, that are necessary for operating the interconnected transmission network" and submit those designations to NERC. NERC would also be authorized to act independently to request a regional entity or other person to propose inclusion of specific facilities (including sub-100 kV facilities) in the list of BES facilities. In rare cases (for example, after a system disturbance makes clear that an unlisted facility is necessary for BES reliability), FERC would also be able to require facilities to be included in the BES, after providing the opportunity for public notice and comment.

The final rule clarified that registered entities must notify their regional reliability entity whenever they determine that one of their system elements is no longer a part of the BES. Thus, the new process established by the rule envisions that NERC would formally keep a registry of system elements, and registered entities would designate specific facilities and system elements to be included in the BES registry.

The final rule provides for a 24-month implementation period, which will begin upon the publication of the rule in the Federal Register. This implementation period will allow owners and operators to plan for, register, and seek exemptions for facilities under the new definition.

FERC TO DETERMINE WHICH ELEMENTS ARE USED IN LOCAL DISTRIBUTION

The final rule found inadequate NERC's proposed process for excluding facilities that are "used in local distribution" and therefore beyond FERC and NERC jurisdiction under the FPA. According to FERC, NERC's proposed process would not "adequately differentiate[] between local distribution and transmission facilities." Therefore, FERC reserved to itself the responsibility for determining, on a case-by-case basis, which facilities are used in local distribution.

The rule suggests that FERC anticipates few cases to determine whether a facility is "used in local distribution," because of the detailed process established by the new BES definition and the inclusion and exclusion process. In such cases, however, the Final Rule requires regulated entities to petition FERC for a factual determination if there is a question as to whether a particular facility is "used in local distribution." To make such determinations, FERC will begin its analysis using the same "Seven Factor Test" established under Order No. 888 (which dealt with open access to transmission lines) to determine whether a facility is "used in local distribution" consistent with the jurisdictional limits of FERC and NERC authority established by Section 215 of the FPA.

IMPLICATIONS

The new BES definition provides clearer national guidance as to which elements of transmission, generation, or other facilities will be subject to reliability rules. After the final rule is published in the Federal Register, the regional entities and NERC will have 24 months to create a more detailed NERC compliance registry and to apply the new BES definition, inclusion, and exclusion process to electric facilities and system elements. During this period, owners and operators of facilities that are no longer included as a part of the BES may seek to deregister to end their federal reliability compliance obligations. Other facilities will become defined BES elements for the first time, and will need to register with NERC and become compliant with all applicable reliability standards by the end of the 24-month implementation period.

With NERC and FERC retaining some discretion to determine whether system elements must be included in the BES, the new definition and exemption process do not establish absolute or "bright-line" criteria for all system elements. Registered entities with facilities that are used in local distribution but that also may be determined to be necessary for the operation of the interconnected transmission network may wish to begin engineering studies and assessments to determine whether to petition FERC for exclusion of such facilities.

In addition, generators with tie-lines above 100 kV that connect a generation facility to the grid, but which are not currently considered "transmission facilities," should determine whether the tie-line facilities must be included as BES transmission elements under the new rule, and if so, what new requirements would apply to the transmission owner(s) and operator. FERC has previously determined that regional reliability entities and NERC have case-by-case discretion to determine which reliability standards apply to such tie-lines. However, the process of making such determinations can be lengthy.

In several places, the final rule states FERC's intention that *all* facilities that are necessary for the operation of the interconnected transmission network be included as BES elements. Applying such a rule to facilities that are both used in local distribution and are also "necessary for the operation of the interconnected transmission network," however, may conflict with judicial decisions that have interpreted the phrase "used in local distribution" under Section 201(b)(1) of the FPA to preserve state jurisdiction over distribution facilities, even if those facilities also serve some transmission functions. If reviewing courts find that the plain language of the phrase "used in local distribution" in Section 215 of the FPA similarly preserves state jurisdiction over local distribution facilities, FERC's jurisdiction may be more limited than the final rule suggests.

Van Ness Feldman will continue to monitor NERC and regional reliability entity developments preparing to apply the new BES definitions and processes, and is prepared to assist clients to understand and comply with the new BES definition and resulting compliance obligations.

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For assistance or additional information, please contact Andrew Art at (202) 298-1817. Described by Chambers USA as "the best energy boutique in the USA," and with one of the largest electric practices in the country, Van Ness Feldman counsels, advises and trains a wide range of clients on reliability matters. Subscribe to our free Electric Reliability Update: Reliability@vnf.com and follow us on Twitter.

In February 2012, Van Ness Feldman expanded its capabilities by combining practices with the Seattle law firm of GordonDerr LLP, a preeminent real estate, land use, water law, and civil litigation firm in the Pacific Northwest. Learn more at www.vnf.com.

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